REMARKS/ARGUMENTS

Reconsideration and allowance of the application are respectfully requested. Currently, claims 1, 4 and 8-26 are pending. However, claims 10, 12, 14, 16, 17, 19, 21 and 23 have been withdrawn from consideration as being directed to a non-elected invention.

Rejection under 35 U.S.C. §103:

Claims 1, 4, 8-9, 11, 13, 15, 18, 20, 22 and 24-26 were rejected under 35 U.S.C. §103 as allegedly being unpatentable over Kagan et al. (U.S. '045, hereinafter "Kagan") in view of Yasunari (JP 2001-168873).[1] Applicant respectfully traverses this rejection.

In order to establish a *prima facie* case of obviousness, all the claim limitations must be taught or suggested by the prior art. The combination of Kagan and Yasunari fails to teach or suggest all of the claims limitations. For example, the combination fails to teach or suggest a child device having "a restoring programmed logic circuitry for attempting said parent device packet sent from said parent device when said communication disconnection detector detects that the communication between said parent device is disconnected, and s*tarting communication when the identifying information of said child device is set in said received connection permitting data of said parent device packet*," as required by independent claim 1. Similar, but not necessarily

[1] U.S. Patent No. 6,798,760 is believed to be an English language counterpart to Yasunari (JP 2001-168873). For example, U.S. Patent No. 6,798,760 and JP 2001-168873 both correspond to Application no. JP 11-348058. Yasunari was considered during the JPO examination of a JP counterpart application (JP Appln. No. 2002-306867) of the present U.S. application. The JP counterpart application was allowed and issued as JP Patent No. 3,830,442.

identical, comments apply to independent claims 11, 13 and 15. Similarly, new independent claim 24 requires, *inter alia*, "attempting to receive said parent device packet sent from said parent device upon detection that the communication with said parent device is disconnected; *and starting communication when the identifying information of the child device is set in said received connection permitting data of said parent device packet to thereby restore communication between the parent and child devices.*"

In example embodiments of the invention, after communication between the parent device and the child device is disconnected, connection permission data including identifying information of a child device is sent from the parent device to the child device. The disconnected child device attempts to receive the parent device packet. If and when the connection permission data included in the parent device packet includes the identifying information of that child device, communication with the parent device is restarted and restored. The child device, which has been temporarily disconnected, can thus immediately restart the communication with the parent device through reception of the connection permission data of the parent device packet.

The combination of Kagan and Yasunari fails to teach the above noted claim limitations. Page 3, lines 11-12 of the final Office Action admits that Kagan fails to disclose restoring a connection within a parent/child system. Yasunari fails to teach or suggest the restoration process or system as claimed. Accordingly, even if the teachings of Kagan and Yasunari were combined as proposed by the Office Action, the combination would not have taught or suggested all of the claim limitations.

It appears that Yasunari does disclose some type of restoration process for disconnected hub/leaf communication. For example, Yasunari discloses in Step 26 of Fig. 5: If hub 2 receives a register request packet RRP from a registered one of leaf apparatuses 31, 32, and 33 due to a radio link failure or the like while in state 12 [registered state in which hub 2 has completed registration of leaf apparatus 31, 32, or 33], hub 2 is brought into state 11 (registering state) and sends a register acknowledge packet RAP to the corresponding leaf apparatus 31, 32, or 33. Yasunari also discloses a leaf apparatus changing from state 4 (registered state) to state 5 (registration is interrupted) in step S9 or changing from state 4 (registered state) to state 0 (initial state) in step S10.

While Yasunari appears to disclose some type of restoration process for disconnected hub/leaf communication, Yasunari (in combination with Kagan) fails to teach or suggest the specific restoration process as claimed. Namely, Yasunari (in combination with Kagan) fails to teach or suggest "a restoring programmed logic circuitry [of a child device] for...*starting communication when the identifying information of said child device is set in said received connection permitting data of said parent device packet*" as require by independent claim 1.

As noted above, steps S9 and S10 (discussed on pages 5-6 of the Office Action) of Yasunari disclose operations when a leaf apparatus 31 is changed from a registered state. These steps are described in col. 7 of Yasunari as reproduced below:

> Step S9: If leaf apparatus 31 judges from the vacant slot information included in a cycle start packet CSP received from

> hub 2 that leaf apparatus 31 itself has not yet been allocated, it is changed from state 4 to state 5 and stops sending the station sync packet SSP1.
>
> Step S10: If leaf apparatus 31 does not receive a cycle start packet CSP from hub 2 after it has been in state 4 for a given period of time, such as 1 second, continuously, it is changed to state 0, whereupon the synchronous catching operation of step S1 is again repeated, and its sending operations of the station sync packet SSP are stopped.

As will be appreciated from the above passage, Step S9 discloses the leaf apparatus judging vacant slot information in a packet received from the hub. However, Yasunari's vacant slot information in S9 from parent to child does not explicitly disclose or remotely suggest child device identifying information or connection permission data as claimed (let alone starting communication of a restoring programmed logic circuitry as the processing of the CSP in steps S9 and S10 relates to detecting hub/leaf disconnection, rather than restoring communication). In detail, the "connection permission data" of independent claim 1 may include the identifying information of the disconnected child device. In contrast, the vacant slot information included in the cycle start CSP of Yasunari is merely information indicative of the slot being not occupied as described in the beginning of paragraph [0021]. The vacant slot information is the information showing the vacant time-divided time slot.

Yasunari therefore fails to teach or suggest identifying information of a leaf device for which the reconnection to the CSP is permitted. It is therefore necessary for Yasunari's leaf device, having been temporarily disconnected, to perform the series of steps again. If, every time the temporary disconnection occurs, it is necessary to request

the connection and registration and to approve such a request as in Yasunari, the burden for performing restoration becomes extremely heavy. The performance of game play, in particular a game that requires a real time response, may therefore be significantly degraded.

In contrast, the parent device continuously sends the connection permission data to the child device in the present invention, even when the communication between the parent device and the child device has been temporarily disconnected. The child device can therefore start the communication with the parent device if and when the identifying information of that same child device is included in the received data from the parent device. Restart and restoration of communication and game play with the parent device is therefore enabled automatically. Yasunari not only fails to teach or suggest these features, but also fails to even appreciate the above-noted benefits of the present invention.

Dependent claim 8 requires "wherein said communication disconnection detector of said child device detects that the communication with said parent device is disconnected for more than a second predetermined time period, and *said first predetermined time period is longer than said second predetermined time period.*" The claimed "first predetermined time period" is the amount of disconnection time detected by the parent device beyond which a deleting programmed logic circuitry of the parent device deletes said identifying information of said child device from said connection permitting data for said child device. Since the first predetermined time period utilized

by the parent device for determining disconnection is longer than the second predetermined time period utilized by the child device, it is possible to secure enough time for the child device to restore parent/child communication. (See pages 4-5 and 40-41 of the substitute specification).

Yasunari discloses in step S7 a case where a leaf apparatus 31 (the child device) does not receive a cycle start packet CSP from hub 2 continuously for a predetermined period of time, such as 1 second, and in step S8 another case where a leaf apparatus 31 does not receive a register acknowledge packet RAP from hub 2 for a predetermined period of time, such as 5 seconds. Yasunari further discloses (see col. 8 and Fig. 5) that hub 2 may hold the connection register of leaf apparatuses 31, 32, and 33 if the duration of such is within a predetermined period of time, even if hub 2 does not receive station sync packets SSP1, SSP2, and SSP3 from leaf apparatuses 31, 32, and 33 due to unstable (low communication quality) of the radio communication environment.

However, none of these disclosures of Yasunari (and hence the combination of Yasunari and Kagan) teach or suggest the limitations of claim 8, in particular "said first predetermined time period is longer than said second predetermined time period." It does not appear that the Office Action has even specifically addressed the limitations of claim 8 (or the similar limitations required by claims 18, 20, 22 and 25) at all. Applicant therefore requests correction thereof.

For at least the reasons above, Applicant requests that the rejection of claims 1, 4, 8-9, 11, 13, 15, 18, 20, 22 and 24-26 under 35 U.S.C. §103 be withdrawn.

Conclusion:

Applicant believes that this entire application is in condition for allowance and respectfully requests a notice to this effect. If the Examiner has any questions or believes that an interview would further prosecution of this application, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

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